

Logarithmic Equations

Date_____ Period____

Solve each equation.

1) $\log 5x = \log (2x + 9)$

2) $\log (10 - 4x) = \log (10 - 3x)$

3) $\log (4p - 2) = \log (-5p + 5)$

4) $\log (4k - 5) = \log (2k - 1)$

5) $\log (-2a + 9) = \log (7 - 4a)$

6) $2\log_7 -2r = 0$

7) $-10 + \log_3 (n + 3) = -10$

8) $-2\log_5 7x = 2$

9) $\log -m + 2 = 4$

10) $-6\log_3 (x - 3) = -24$

11) $\log_{12} (v^2 + 35) = \log_{12} (-12v - 1)$

12) $\log_9 (-11x + 2) = \log_9 (x^2 + 30)$

$$13) \log (16 + 2b) = \log (b^2 - 4b)$$

$$14) \ln (n^2 + 12) = \ln (-9n - 2)$$

$$15) \log x + \log 8 = 2$$

$$16) \log x - \log 2 = 1$$

$$17) \log 2 + \log x = 1$$

$$18) \log x + \log 7 = \log 37$$

$$19) \log_8 2 + \log_8 4x^2 = 1$$

$$20) \log_9 (x + 6) - \log_9 x = \log_9 2$$

$$21) \log_6 (x + 1) - \log_6 x = \log_6 29$$

$$22) \log_5 6 + \log_5 2x^2 = \log_5 48$$

$$23) \ln 2 - \ln (3x + 2) = 1$$

$$24) \ln (-3x - 1) - \ln 7 = 2$$

$$25) \ln (x - 3) - \ln (x - 5) = \ln 5$$

$$26) \ln (4x + 1) - \ln 3 = 5$$